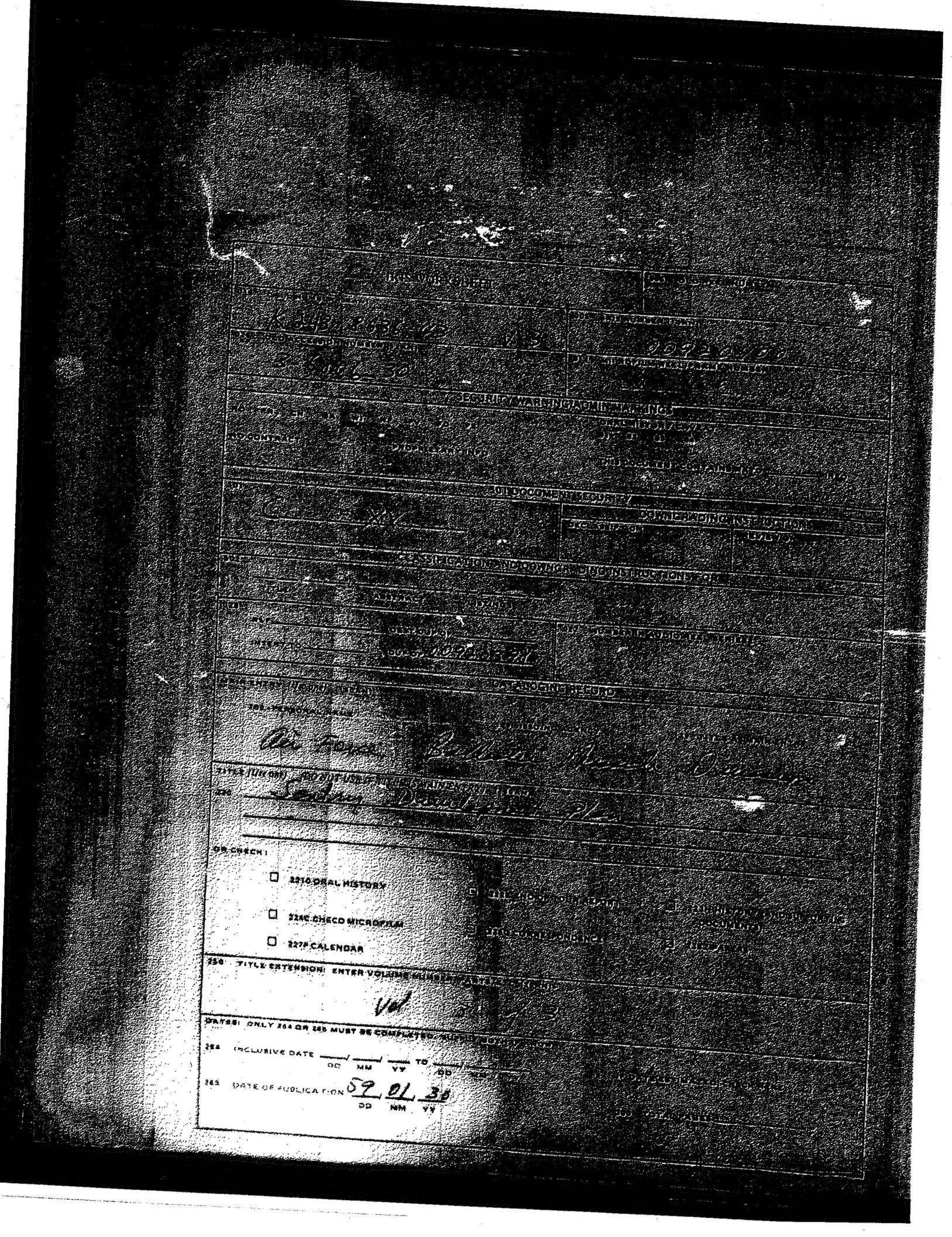

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DEVELOPMENT PLAN

30 January 1959

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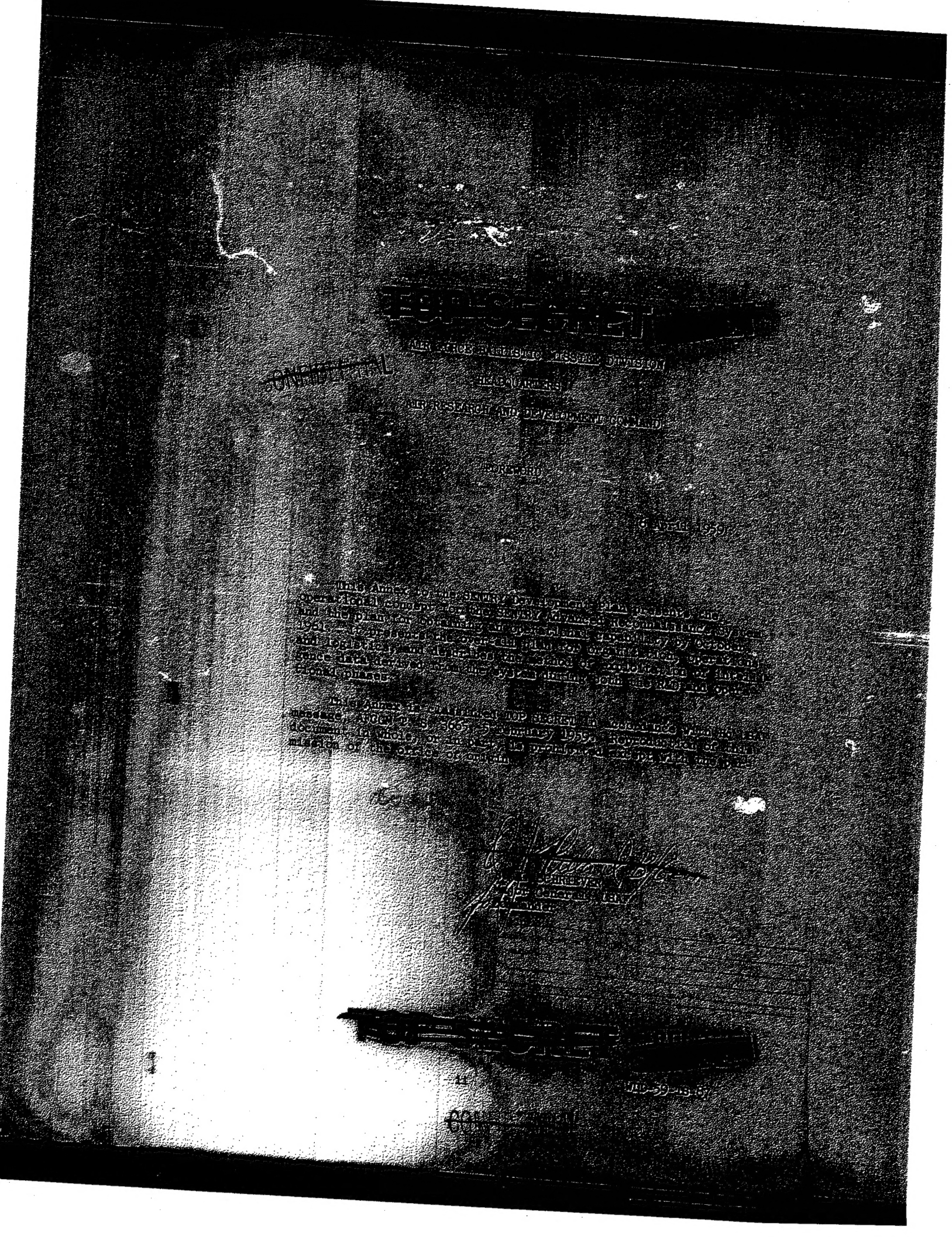

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I. GENERAL

A. INTRODUCTION

B. HISTORY

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E. ENCLOSURE ON DEVELOPMENT/OPERATIONAL CONCEPT

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VII. FUNDING

[redacted]

[redacted]

A. INTRODUCTION

1. The [illegible] (SENTRY) is being developed to provide [illegible] and attack warning [illegible] and [illegible] the Department of Defense [illegible] World Wide Network of [illegible]

2. This Annex has been prepared to [illegible] operational concepts [illegible] necessary to achieve an operational capability.

3. This Annex also provides for the [illegible] data required [illegible] and [illegible] provides for an operational [illegible] with ground management.

B. HISTORY

1. HQ USAF approved Operational Requirement No. 30, dated 5 March 1957 and revised 26 September 1958 which [illegible] 80-93 established a requirement to develop an advanced reconnaissance system (ARS) which would [illegible] gathering equipment. This capability is required for [illegible] both national and Air Force [illegible]

2. References: The [illegible]

a. HQ USAF Preliminary [illegible]

b. General Operational [illegible] 1955, revised 26 September 1958 with [illegible]

c. Operational Annex to [illegible] 1958.

d. Memorandum for the Secretary of [illegible] Program for Advanced Research Projects Agency, dated [illegible] January 1959.

e. Space System Development [illegible]

C. DESCRIPTION

1. The SENTRY system is composed of the [illegible] launch facilities, tracking facilities, data [illegible] and operational control facilities, and a [illegible]

[illegible]

[redacted]

c. Subsystem "C" - Auxiliary Power. This subsystem is devoted to the development of auxiliary power systems. Upon the initiation of the operational program, research and development in the auxiliary power subsystem will have proceeded to the point [illegible] photovoltaic [illegible] with a high energy (hydrogen-oxygen fuel cell) battery [illegible] possibility also exists [illegible] in the operational program [illegible] SNAP I radioisotope auxiliary power system [illegible] also includes the necessary regulators and inverters.

d. Subsystem "D" - Guidance and Control. This subsystem includes the equipment necessary to guide and control the space vehicle into the desired orbit and to control its attitude in orbit. [illegible] will be accomplished by the Atlas [illegible] guidance system [illegible] guidance and control system will [illegible] control of the space vehicle after separation from the booster.

e. Subsystem "E" - Visual Reconnaissance

(1) Readout. The subsystem equipment for the visual reconnaissance readout program consists of the space vehicle-borne equipment required to collect intelligence information in the visible spectrum, to process and store this information [illegible] command signal, to convert the stored image to an appropriate video signal for transmission to the ground by the ground-space communications subsystem data link [illegible] subsystem [illegible] of the ground-based equipment required to take the output of the data link and reconstitute the signal into photographic form for [illegible] processing and intelligence use.

(2) Recovery. The plans for the visual reconnaissance recovery program call for two separate payloads, one for the purpose of obtaining mapping coverage, and the other for high resolution reconnaissance information. In both cases, the data is returned to earth in the recoverable portion of the satellite vehicle.

f. Subsystem "F" - Ferret Reconnaissance. This subsystem includes the equipment to conduct a program consisting of [illegible] sophisticated ferret packages, progressing from the basic F-1 system through the F-2 and F-3 systems to an eventual versatile [illegible] capability. Later versions will include detection and classification of [illegible] signals, measurement of additional parameters, improved locational accuracy, analog recording of specific signals, and 'National Indicator' type [illegible].

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[redacted]

[illegible]

b. Subsystem [illegible] (Ground-Space Communications). [illegible] space communications subsystem will perform the following [illegible] acquisition and tracking of the space vehicle, [illegible] recovery [illegible] communications and the command system [illegible] and ground station.

c. Subsystem [illegible] Data Processing. [illegible] system includes all equipment necessary to [illegible] provide [illegible] developmental [illegible] of the SENTRY program [illegible] intelligence data derived [illegible] timely manner. This subsystem [illegible] operation and to handle the large quantity of input data [illegible] process records with minimum delay [illegible] between interpreters [illegible] or individual items can be disseminated and correlated [illegible] with other source data for intelligence analysis. Throughout [illegible] development of the system, efforts will be [illegible] delay between receipt of data and [illegible] for comparing previous coverage and background intelligence with new data and for collating data from photo, [illegible] and infrared sensors, will be provided.

d. Subsystem [illegible] Personnel Subsystem. This subsystem is concerned with the design and development of the personnel element of the weapon system. It consists of system human engineering, qualitative personnel requirements information (QPRI), training equipment analysis and the technical manuals effort.

D. MISSION

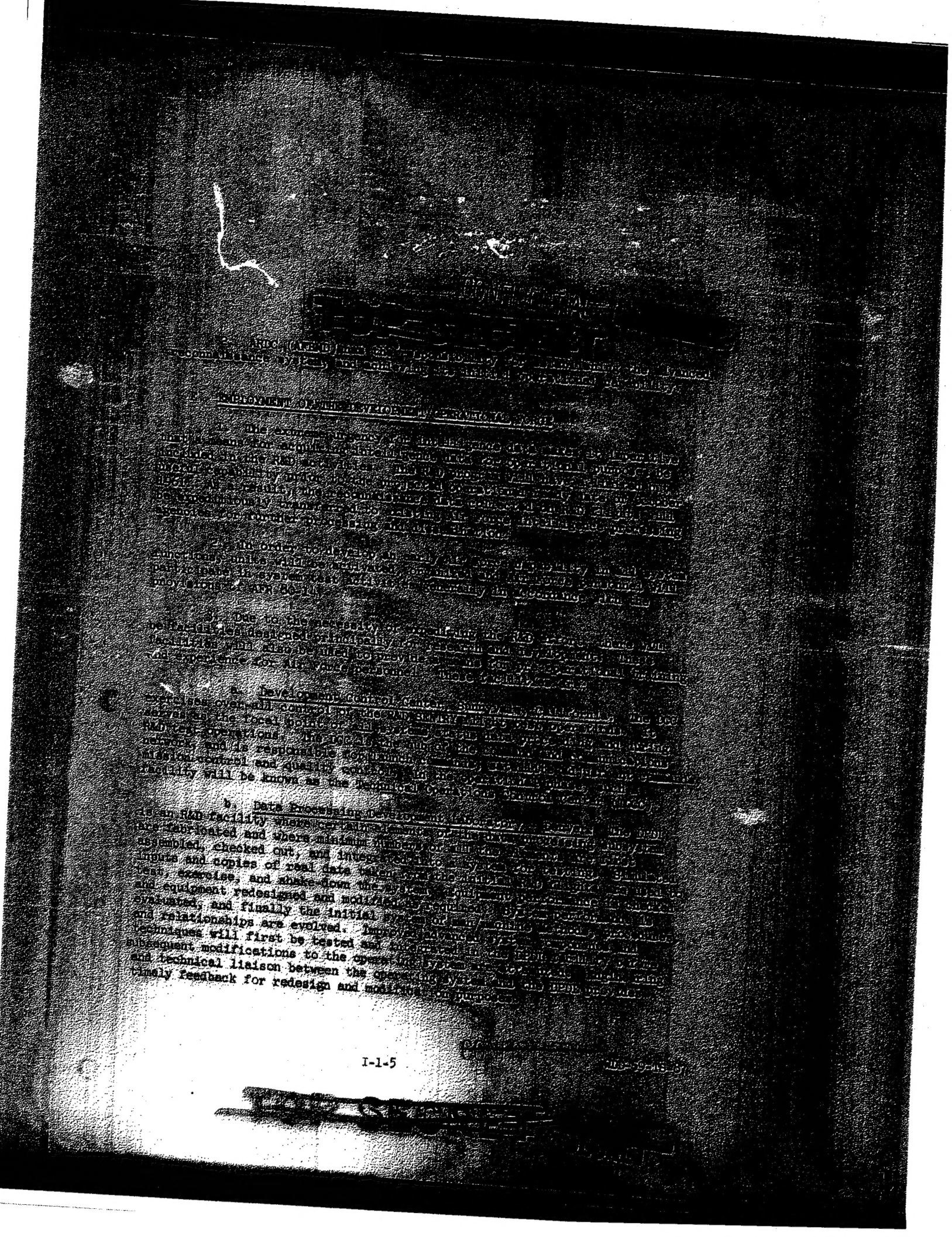
1. The mission of the SENTRY system is to provide [illegible] data which contributes to determining the earliest possible warning of potential enemy capabilities for attack on the United States or friendly nations. This will be accomplished by maintaining selective surveillance of enemy activity and areas under their control. The SENTRY system will provide:

a. Continuous intelligence data flow for assessment of Soviet military activity.

b. Continuous intelligence data for assessment of Soviet military and industrial capabilities.

c. Continuous and repetitive visual reconnaissance of selected target areas.

d. Detailed mapping information of the Soviet complex.



[redacted]

OPERATIONAL CONCEPT

[redacted]

launch. The responsibility for launch [redacted] will be the responsibility of Aerospace [redacted] Command, with assistance and support as required from [redacted] Command. [redacted] 1961 and terminate [redacted] 1966. [redacted] Operation of Air Force military personnel [redacted] will begin [redacted] October 1961 with [redacted] responsibility [redacted] personnel under the operational control of the ARPA program manager. [redacted] launch facilities now built and operated [redacted] September 1961, [redacted] ground guidance station at Vandenberg AFB will be made available for the [redacted] operational launchings. In order to meet [redacted] necessary to secure the agreement and approval of the Secretary of the Navy.

2. The SENTRY operational program will include the following tracking and acquisition stations (TAS) for [redacted]

a. The Northeast Station, New Boston Air Force Base, New Hampshire

b. The Central Southeast Naval Air Station, Orlando, Florida

c. The Southwest Station, Vandenberg Tracking and Acquisition Station, Vandenberg Air Force Base, California

d. Hawaiian Tracking Station, [redacted] determination will be made to acquire [redacted] needed in the operational program.

3. The Technical Operations and Control Center (TOCC) and the Intelligence Processing Center (IPC) will be established at Offutt AFB, Nebraska. The TOCC and the IPC will be housed [redacted] order to provide for the most efficient operation [redacted] operational function within the Wing. Headquarters [redacted] a separate squadron under the Wing. Broad-band communications [redacted] will be provided between the tracking/acquisition stations and the TOCC and IPC to facilitate instantaneous relay of [redacted]

C. COMMAND RESPONSIBILITIES

1. Hq USAF:

a. Hq USAF will establish the relative priority for intelligence collection requirements for the operational program through [redacted]

Assistant Chief of Staff, Intelligence (AFOIN)

b. AFOIN will accomplish all other applicable Air Force intelligence requirements on a continuous basis and furnish data as far in advance as possible (AFOIN) in the form or specific [illegible]

c. The Aerospace Defense Command (ADC), ARDC will [illegible] Command [illegible] plans and directives necessary for the [illegible] compliance with [illegible]

d. Strategic Air Command (SAC)

(1) SAC will provide [illegible] collection and processing matters [illegible]

(2) SAC will make a study [illegible] the dissemination and processing of intelligence [illegible]

e. Air Materiel Command (AMC)

[illegible] for the SENTRY operational program and will provide the necessary support [illegible] logistics problems.

f. Air Training Command (ATC)

(1) ATC, in accordance with [illegible] a personnel training concept in support of the system.

(2) ATC will provide [illegible] quantitative, and qualitative requirements specified by [illegible]

H. OPERATIONAL CHARACTERISTICS

1. The ICBM booster (ATLAS) provides the primary propulsive power to the SENTRY space vehicle. Separation occurs at a [illegible] altitude and attitude. As the booster drifts away, the space vehicle continues in a self-stabilized pre-determined coast to a [illegible] At the termination of the coast phase, the space vehicle's [illegible] plant activates, supplying the critical velocity [illegible] erect the vehicle to the proper attitude. The vehicle will be programmed to initiate and terminate sensing equipment [illegible] with a pre-determined program.

[illegible]

2. Revolutions around the earth will be completed approximately 90 minute intervals. The space vehicle will continue around the earth and when within range for a ground receiving station, upon command, readout sensory equipment will begin to transmit the recorded data. These data will be received, processed, and transmitted to the using agencies. In case of a recovery payload, the vehicle will receive proper firing commands and, upon the reaching station. Expected useful life for early versions of the system is on the order of ten to thirty days. Expected useful life for later versions of the system is in excess of a year.

3. The SENTRY system will provide a reconnaissance capability of two modes, readout and recovery.

a. Readout Program.

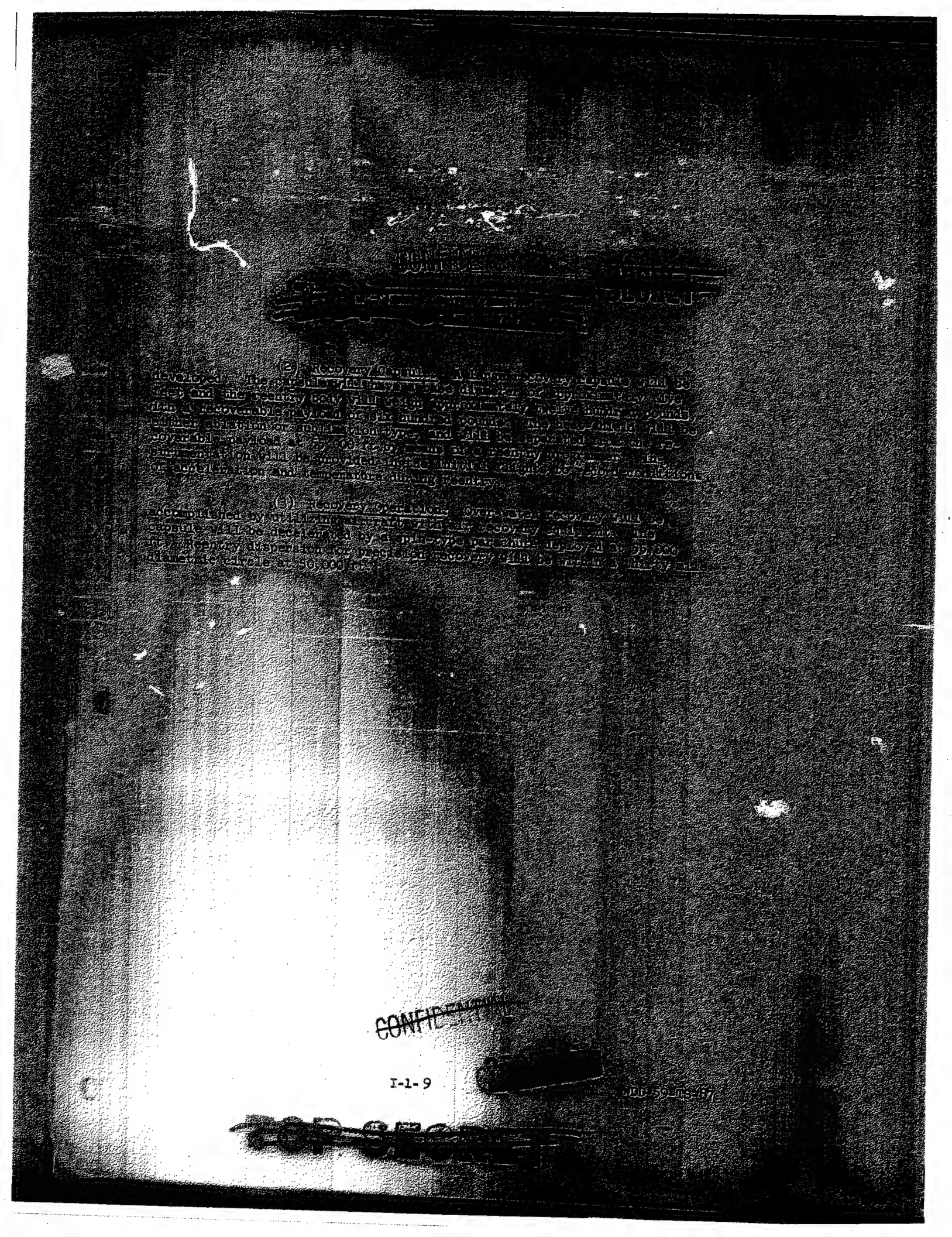
(1) Visual. The reconnaissance equipment for the visual reconnaissance readout program consists of the space-borne equipment required to collect intelligence information in the visible spectrum, to process and store this information, and on a command signal from the ground, to convert the stored images to appropriate signals for transmission to the ground. The initial visual equipment will be capable of resolving targets 25 feet in size, and development will continue toward the goal of resolving resolutions of five feet or less.

(2) Ferret. The electronic reconnaissance subsystem (ferret) consists of the space vehicle-borne equipment required to collect information from radiation in the region of the electromagnetic spectrum between 30 and 40,000 mc/sec; to store this information; to retain or index it as may be necessary; and at the proper time, to reconvert the stored information into an appropriate electrical signal for transmission to the ground by the ground-space communication subsystem.

(3) In addition to the space vehicle-borne equipment for the above two modes of capability, related ground-based equipment is required to take the data output of the vehicle for further processing and intelligence use.

b. Recovery Program

(1) Visual: The visual recovery program will provide, initially for two separate payloads. The first of these payloads will be designed to obtain photographic coverage or mapping accuracy and the other payload will be designed to obtain high resolution reconnaissance information. In both cases, the data will be returned to the earth in the recoverable capsule portion of the space vehicle.



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II. OPERATIONS

A. EMPLOYMENT

1. The operational employment of this system is to provide timely [illegible] reconnaissance of [illegible] and/or designated [illegible] areas for the purpose of:

a. Strategic warning of attack.

b. Collection of intelligence data to satisfy [illegible] intelligence objectives.

c. Support of United States [illegible] (SIOP).

d. An option determining the intentions of a potential enemy and the status of his [illegible].

2. Space vehicles shall be employed to acquire and transmit data concerning locations, capabilities, and [illegible] of [illegible] and [illegible] forces, defensive systems, [illegible], [illegible], topography and geography. They shall be employed singly or in [illegible] to obtain desired coverage or selected areas in a specified [illegible] frequency or density for coverage. Payload [illegible] or data acquired from a variety of [illegible] sensors, such as those of the photographic, electronic, [illegible], or other [illegible] shall be employed to provide the desired coverage.

3. Intelligence derived from SAINT shall be applied [illegible] measures in which operations [illegible] or determined [illegible] with its bearing on the national intelligence objectives [illegible] priority as follows:

a. Priority 1 - Warning of attack.

b. Priority 2 - Warning of [illegible] operations.

c. Priority 3 - Strike target intelligence.

d. Priority 4 - Penetration of [illegible] defenses.

B. MISSION ASSIGNMENT

Specific areas of interest to be maintained under surveillance will be assigned by AFDC (AFSMD) in consonance with [illegible] requirements as designated by AFCIN.

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[illegible]

C. OPERATIONAL REQUIREMENTS

1. Launch and Vehicle Tracking. [illegible] located at Vandenberg AFB, California [illegible] These facilities [illegible] After launch, when the space vehicle is on the selected orbit, [illegible] in areas of interest [illegible] photography and electronic recording [illegible] accomplished and stored [illegible] within range of a ground tracking and acquisition station [illegible] initiated by these [illegible] stations [illegible] stored information which in turn will be received, recorded and [illegible] to a central [illegible] located at Offutt AFB, Nebraska [illegible] and distribution. Three [illegible] stations [illegible] California in the Southwest U.S., at New Boston Bombing Range in New Hampshire, the Northeast U.S., and at Ottumwa, Iowa, the Central U.S.

2. Reconnaissance Capabilities. [illegible] intelligence information is essential [illegible] coverage. In consideration of the [illegible] the ARS, the engineering program [illegible] resolution. Intelligence information will be obtained which will contribute to the following:

a. Improved knowledge of potential enemy [illegible] intentions which will greatly improve the ability of the U.S. to conduct peacetime negotiations, to plan adequate defenses, and to launch the [illegible] strike force, should such a necessity arise.

b. Accurate target information [illegible] be currently [illegible] for targeting the strike force.

c. Ferret data will be obtained and used for the development of suitable countermeasures.

d. Disposition and nature of defense installations will be observed and used to develop effective penetration tactics.

e. Technological data will be acquired and used for the proper orientation of the U.S. weapon systems and possibly for their improvement.

3. Technical Operations and Control Center (TOCC). Launch commands, space vehicle adjustment commands, quality control monitoring, and space vehicle mission control will be exercised from the centralized Technical Operations and Control Center, located at Offutt AFB, Nebraska.

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4. Intelligence Processing Center (IPC). Reconnaissance and surveillance data will be transmitted from the [illegible] vehicle via the T/A stations to the Intelligence Processing Center (IPC) through the DLCC. The objectives of the IPC are to:

a. Extract and report intelligence [illegible] from SENTRY reconnaissance sensors for short-term [illegible] indication [illegible].

b. Provide convenient-to-use [illegible] of reconnaissance records as source material for intelligence production [illegible].

c. Provide collection and quality control [illegible] within the SENTRY system. The DLCC and IPC will be at the same physical location. Intelligence data will be reduced, processed and subjected to evaluation. This information will subsequently be disseminated to other military and governmental agencies for further interpretation and analysis.

5. Communications. The SENTRY communications system will be one integrated operational system. However, because of the continuing development effort during the operational phase, certain [illegible] will be tied into the communications system. [illegible] must be provided for: (1) command control communications, (2) [illegible] net between launch, T/A squadrons and the [illegible] organization. Planning and implementation [illegible] the system will be considered to consist of six main subsystems, described as follows:

a. Administrative Communications are the [illegible] found at any Air Force Base, modified where necessary to comply with SENTRY requirements. These support facilities consist of the base telephone exchange (central switching facility), those lines [illegible] at the various installations (which are used for [illegible] supply, maintenance and administrative functions), and base non-tactical [illegible] (maintenance, security, taxi services, etc.).

b. Technical Communications are the lines, circuits and terminations for those communication functions concerned with launching operations, inter and intra station communications and the command system.

c. Data Link Communications are the video circuits, wide band graphic circuits and lines to permit transmission of reconnaissance data to the Intelligence Processing Center. To insure immediate availability of the intelligence information at the IPC, video circuits between the T/A stations and the IPC must permit real-time transmission of the intelligence data.

[illegible]

AIR FORCE BALLISTIC MISSILE DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Air Force Unit Post Office
Los Angeles 45, California

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JUN

[illegible]

b. Ground Stations [illegible] tracking and acquisition stations [illegible] positioning and command [illegible] adjusting [illegible] vehicle [illegible]

c. Operational Control and [illegible] concept of logistic support [illegible] Pathway prepared by the Air Force Command.

[illegible] exercises, would be located [illegible] will be provided in the [illegible] mission. They will be [illegible] Vandenberg Air Force Base [illegible] Squadron with [illegible] boosted vehicles and accomplish [illegible] storage.

f. Data Recovery Communications - ARDC (AFBMD) [illegible] be trained for the [illegible] boosted vehicles and [illegible] communications, and orbital [illegible]

D. INTELLIGENCE REQUIREMENTS

1. All reconnaissance data collected during the R&D phase or operational phase will [illegible] Actual flight data required for the contractor [illegible] vided by the Air Force after the data [illegible] data will be considered as [illegible] cluding the first instrumented [illegible] on flights. This material will be processed by [illegible] placed, as soon as possible, [illegible] tation. The processing and publication of the data will be handled [illegible] in three separate but related phases.

a. Phase I - Processing and publication during [illegible] will produce and disseminate, on a [illegible] system operation and command of the [illegible] initial or critical information and select [illegible] the intelligence agencies for their [illegible] duced and disseminated as directed by [illegible] be handled differently in the R&D [illegible] program.

[illegible]

(U) During the 1960 period the Phase I processing will be accomplished by [redacted] and Phase II processing will be accomplished in two locations: the Operational Subsystem (OSS) and [redacted]. The OSS will be expanded to include operational and [redacted] during the subsystem development phase. The [redacted] will be the home of the R&D subsystem, and will be turned over to the Air Force [redacted] after the development phase is completed.

(U) During the Operational Period, [redacted] of the SENTRY Intelligence Processing Center to [redacted]. Phase II processing will be accomplished [redacted] at the Center.

b. Phase I - Basic Data Processing and Exploitation (U)

Phase I processing is the basic processing and exploitation which produces intelligence information for support of the intelligence community and intelligence and for support of [redacted]. Phase I processing, in the form of [redacted] is the source of select source material which will be [redacted] and the SENTRY derived data and [redacted] themselves, National Intelligence Estimates, current operational intelligence, orders of battle, and all other intelligence products. Phase II exploitation is accomplished by [redacted] outside of the SENTRY Intelligence Processing Center.

c. Phase II - Advanced Processing and Exploitation (U)

Expand the data and materials produced during Phase I and [redacted] Phase II processing is the production of detailed [redacted] analyses and evaluations [redacted] source material and [redacted] graphic maps, geodetic data sheets, [redacted] Phase II exploitation is accomplished by [redacted] outside of the SENTRY Intelligence Processing Center.

2. These three processing phases are divided into two separate time periods. The first period begins with the [redacted] instrumented R&D launches in the spring 1960 and [redacted] Center at Offutt AFB is completed and equipped to operate in the second period is the fully operational period beginning in October 1961 and extending into the future.

← Period →	← Period →
R&D Flights	Operational and R&D Flights / Operational Flights
Initial reconnaissance instrumented R&D flights	Oct 1961 Operational Center at Offutt

[redacted]

3. Research and development program (period [illegible] 1960 - [illegible] 1961)

a. [illegible] and [illegible] in the [illegible] phase will include [illegible] Subsystem (P) (Photo) and (F) (Survey). [illegible] continuously collaborate with the [illegible] and during this period be directly involved in providing SAC with an [illegible] capability to accomplish the [illegible] required for the Phase-I processing.

b. Subsystem "P" (35mm focal length photo). The following responsibilities and functions pertaining to the [illegible] photographic reconnaissance system have resulted from the photographic phase:

(1) The Instrumentation Squadron (P & A Station) will provide, by the fastest transportation method available:

(a) Three copies of the 35mm primary record and one (1) copy of the video tape to the DPL at Denver.

(b) Tracking data to the DCC at Palo Alto for the computation.

(2) The DCC at Palo Alto will provide:

(a) Engineering feedback as required for the control of picture quality and for development and improvement of the system.

(b) Orbital and navigational data on magnetic tape to the DPL at Denver.

(3) The DPL at Denver will provide:

(a) Engineering feedback as required to the DCC at Palo Alto to improve picture quality, system development and operation.

(b) Original negatives of the primary record reassembled into 9-1/2 inch wide film properly [illegible] with the navigational, [illegible] other applicable data, duplicate center format, 70 mm [illegible] and any special

[illegible] permission of the [illegible]

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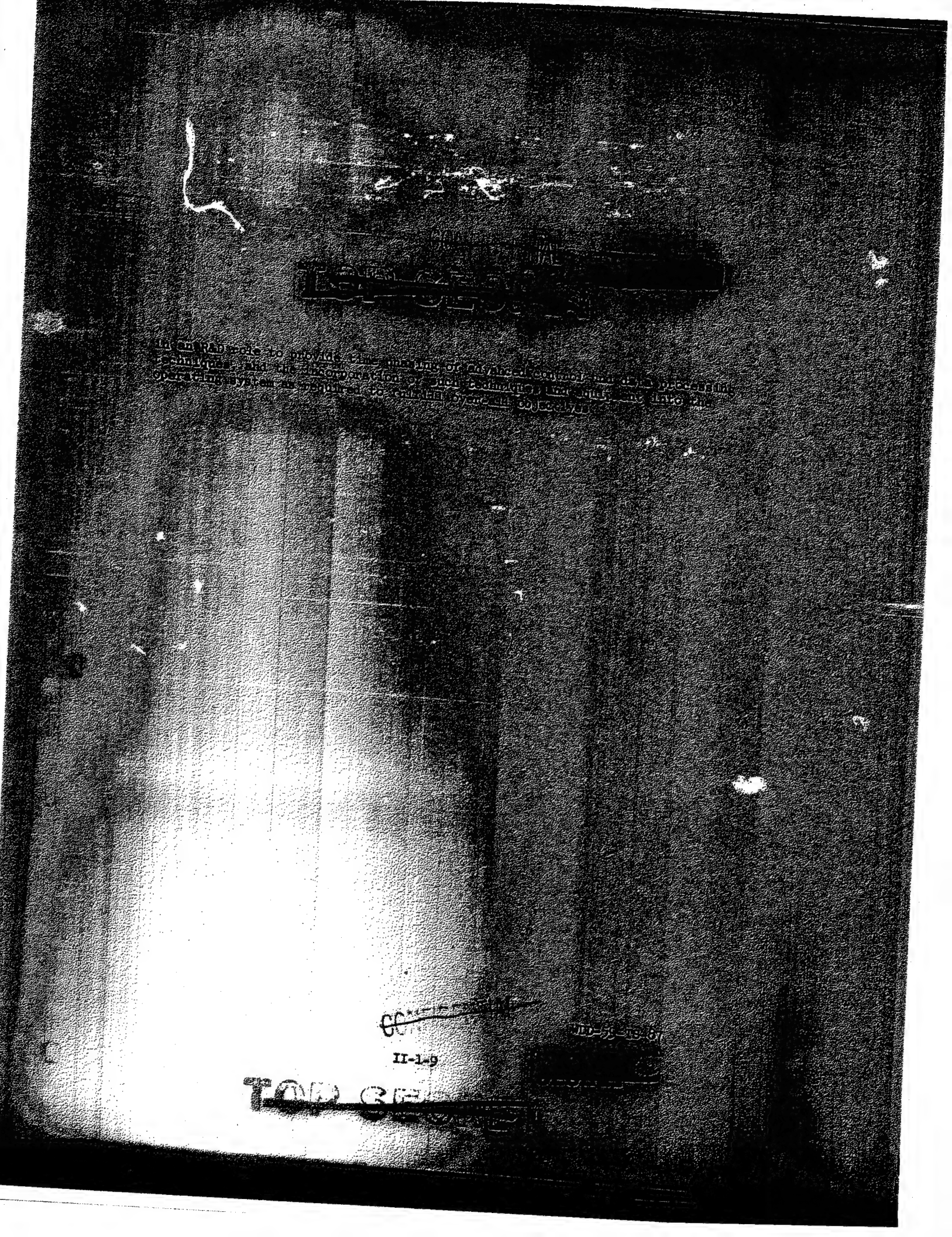


SECTION III ORGANIZATION (AND OPERATING)

1. Organization (Operation and Manpower)

a. Manpower

(1) Air-ground [illegible] and supporting [illegible] are [illegible] and approximate [illegible] as [illegible].

(2) Subsequent to the [illegible] and [illegible] of personnel, [illegible] and supporting [illegible] will be [illegible] and entered in this manner.

b. Manpower authorizations and [illegible] will be [illegible] from USAF channels.

2. Organization

a. AFBMD with [illegible] and [illegible] over the 6594th Test Wing to be activated in April 1959 and located [illegible] Test Operations Control Center (TOCC) at [illegible] and [illegible] will become a [illegible] of the 6594th Test Wing. Upon [illegible] Safeguard System [illegible] will be [illegible] and [illegible] guidance to the Wing during the R&D phase and [illegible] becomes sufficiently developed and [illegible] to permit [illegible] A tentative organizational chart is included to make [illegible]

b. The 6594th Test Wing, after [illegible] and [illegible] will consist of:

(1) 6594th Launch Squadron, [illegible]

(2) 6596th Instrumentation Squadron, [illegible]

(3) 6594th Instrumentation Squadron, [illegible] Range, New Hampshire.

(4) 6595th Instrumentation Squadron, [illegible]

(5) 6594th Data Processing Squadron, [illegible]

(6) 6594th Wing Operating Location, [illegible]

(7) 6594th Wing Operating Location, [illegible]

(8) _____ Recovery Control Group, [illegible]

c. [redacted] Recovery Control Group, will be responsible for operation of the recovery control force and will exercise command jurisdiction over:

(1) 6593d Test Squadron (Special) Eastern Area, [redacted]

(2) [redacted] Instrumentation Squadron, Hawaii.

3. Personnel Policies

a. Procurement and training of personnel will be accomplished with the availability of equipment and facilities.

b. Controls, key areas and essential skills will be placed into the system for familiarization, indoctrination and training in the test phases for the R&D program well in advance of operational status.

c. Manning and personnel utilization provide for operations on a normal commuting 8-hour shift basis.

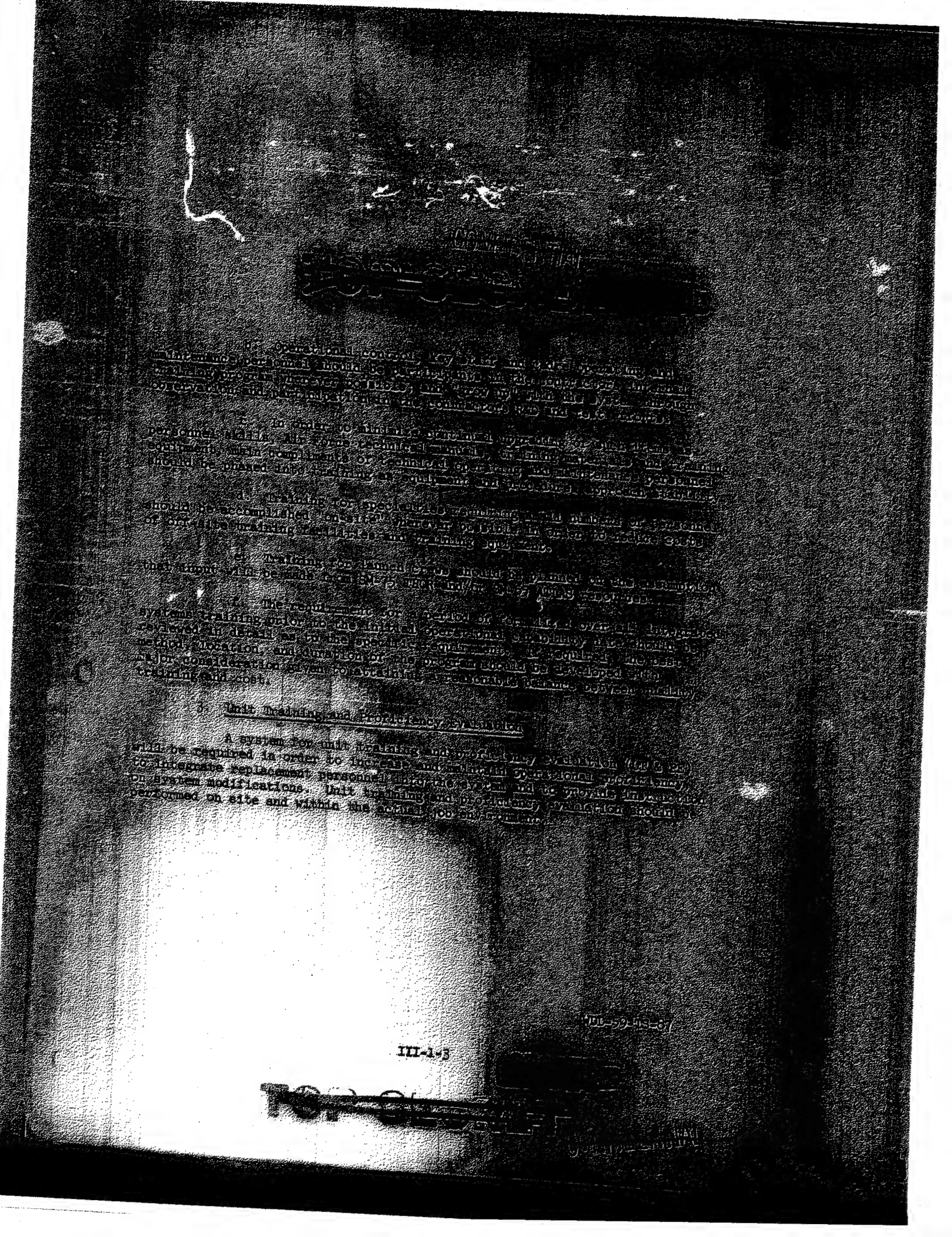
d. Launch crews will be on 8-hour shift [redacted] other units will be manned on a 24 hours basis [redacted] on orbit.

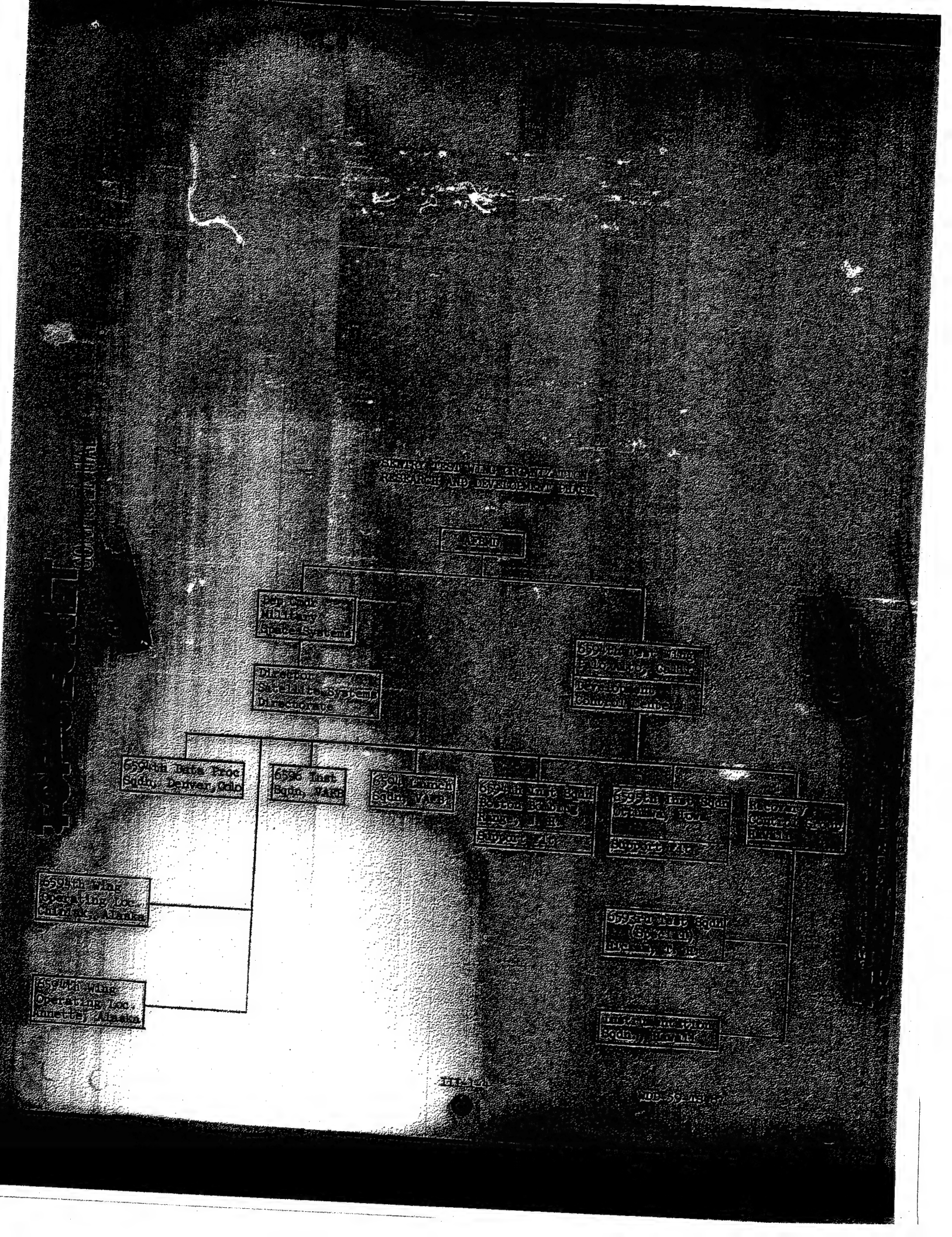
B. TRAINING

1. A detailed personnel training concept to support the SAINT system will be developed jointly between AFSC and [redacted] to consider this problem will be held during the month of [redacted] over-all program will be established to assure that the [redacted] its subordinate units will be sufficiently well trained to [redacted] for operational control and provide an [redacted] October 1961.

2. Factors and statements or considerations to be [redacted] the personnel training concepts conference are as follows:

a. Selection and training of personnel for the SAINT system should take into account the several unique characteristics of the system. Training for skills unique to the system should be [redacted] for the relatively small numbers of personnel required [redacted] qualified personnel in specialities (and systems) closely [redacted] requirements should be provided in order to reduce the [redacted] over-all training costs.





IV. LOGISTICS

A. GENERAL

1. The overall management responsibility for the logistics support of the operational program will be [illegible] in coordination with the using command.

2. Logistics support of the operational SENTRY program will be accomplished in accordance with the approved SENTRY Logistics Plan to be published by AMC.

3. Prior to publication of the SENTRY Logistics Plan, a detailed study of the most appropriate means for the handling of logistic, field, and depot maintenance support to the SENTRY system will be undertaken. Pending the completion of this study and the publication of the approved Logistics Plan, the following guidance is [illegible].

4. Material Support. From the beginning of the SENTRY operational program, the AMC SENTRY Logistics Support Manager will manage the AMC support of all supply and depot maintenance actions for the booster portion (SM-65 missile and its ground support equipment, to including common and standard GSE and spares items) required in support of the SENTRY program.

5. In the initial phase of the operational program, the development agency will be responsible for modifications and supplementing equipment in the readout (R/O) stations, computing, tracking and power ground support equipment. As systems become relatively [illegible] configuration, management support responsibility for selected hardware will be transferred from the contractor to AMC support. At this point in time, Air Force provisioning procedures and documentation requirements required in support of the operational organizations will be placed into effect.

6. Special measures will be taken to identify and control the equipment and spare parts required for the direct mission support of this weapon system to prevent their absorption into the Air Force inventory in such a way as to require excessive stocking quantities and elaborate control in order to assure ready availability to the users.

7. Maximum portable life will be made of existing [illegible] materiel facilities.

8. The equipment and personnel required for the [illegible] will, in most cases, be the same as for comparable [illegible] launchings.

9. No radical changes in the existing [illegible] Logistics fields are anticipated in supporting [illegible] when viewed from the weapon system and its [illegible] equipment aspects.

B. PROCUREMENT

1. The over-all procurement [illegible] to provide a build-up of equipment and [illegible] schedules, quantity procurement [illegible] will be delayed, consistent [illegible] usage rate as possible [illegible] concentrated on long lead [illegible]

4. Initial provisioning [illegible] SLBM weapon system [illegible] stock or obsolete items [illegible] changes, etc., effected [illegible]

3. Procurement of the booster, [illegible] equipment and spare parts will be accomplished by the [illegible] Missile Center. Requirements for these items must be identified to the AMMRA in sufficient time to allow for procurement action by the part of AMC Ballistic Missile Center.

C. SUPPLY

1. Supply support for this program will be planned to provide availability concurrently with and in support of operational and maintenance requirements.

2. The application of the item or service and not the item or service itself, determines the priority [illegible]

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[redacted]

3. Stockage of support items at the [redacted] will be governed by the maintenance concept and capabilities of the using organization. Additional items will be stocked in the SENTRY equipment to accurately forecast requirements for training, [redacted]

D. TRANSPORTATION

1. The SENTRY will be air transportable by [redacted] the greatest and most reliable mode of transportation for the [redacted] different with military requirements and over the [redacted] support. Packaging and preservation methods will [redacted] different with the method of transportation to be used, [redacted] conditions, and the [redacted] and cubage will be minimized toward the [redacted]

2. Surface transportation, except [redacted] zation will be provided by the support base.

3. Air freight and/or commercial [redacted] the support base will be required to move the [redacted] ment or missiles, GSE and spares associated [redacted]

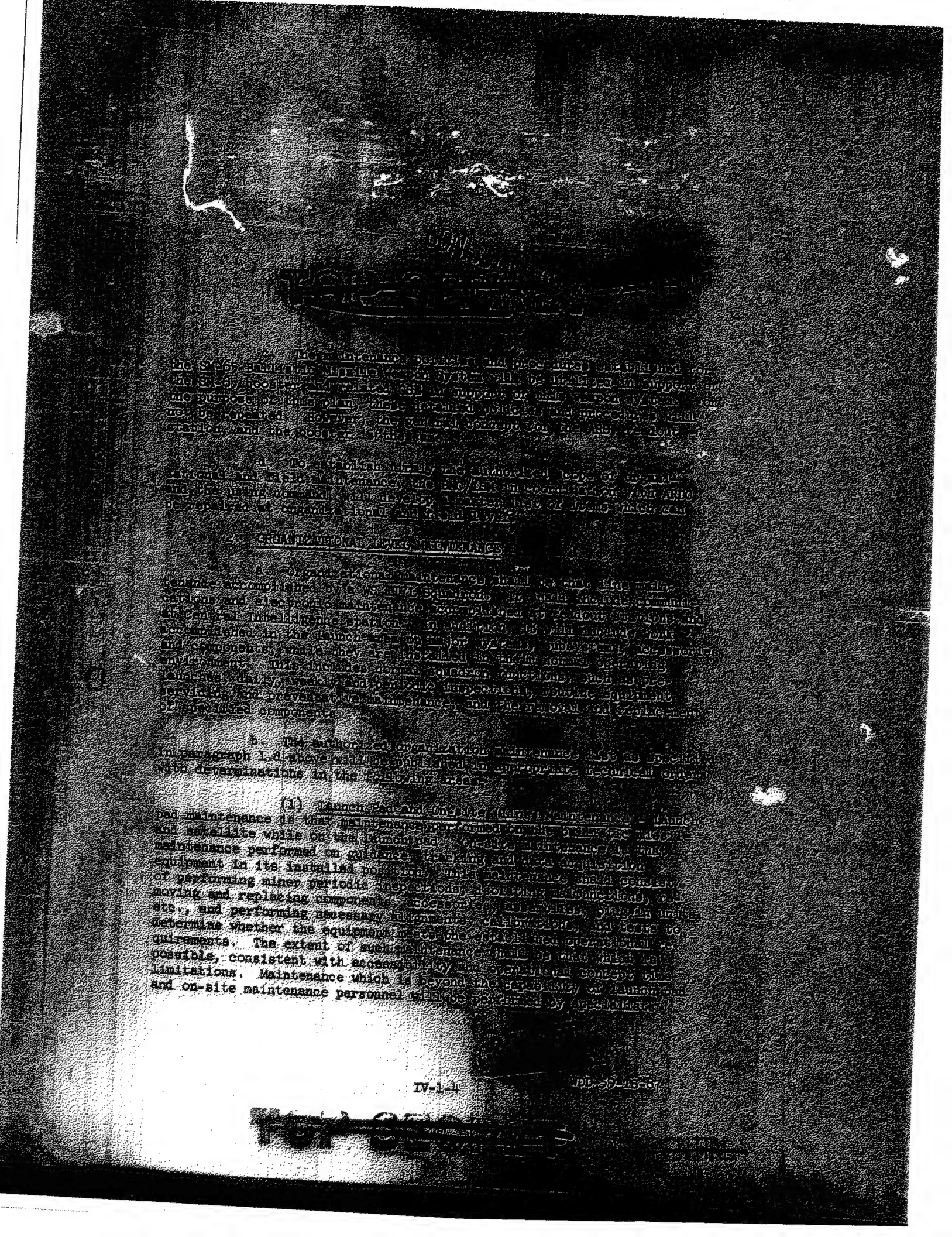
E. MAINTENANCE

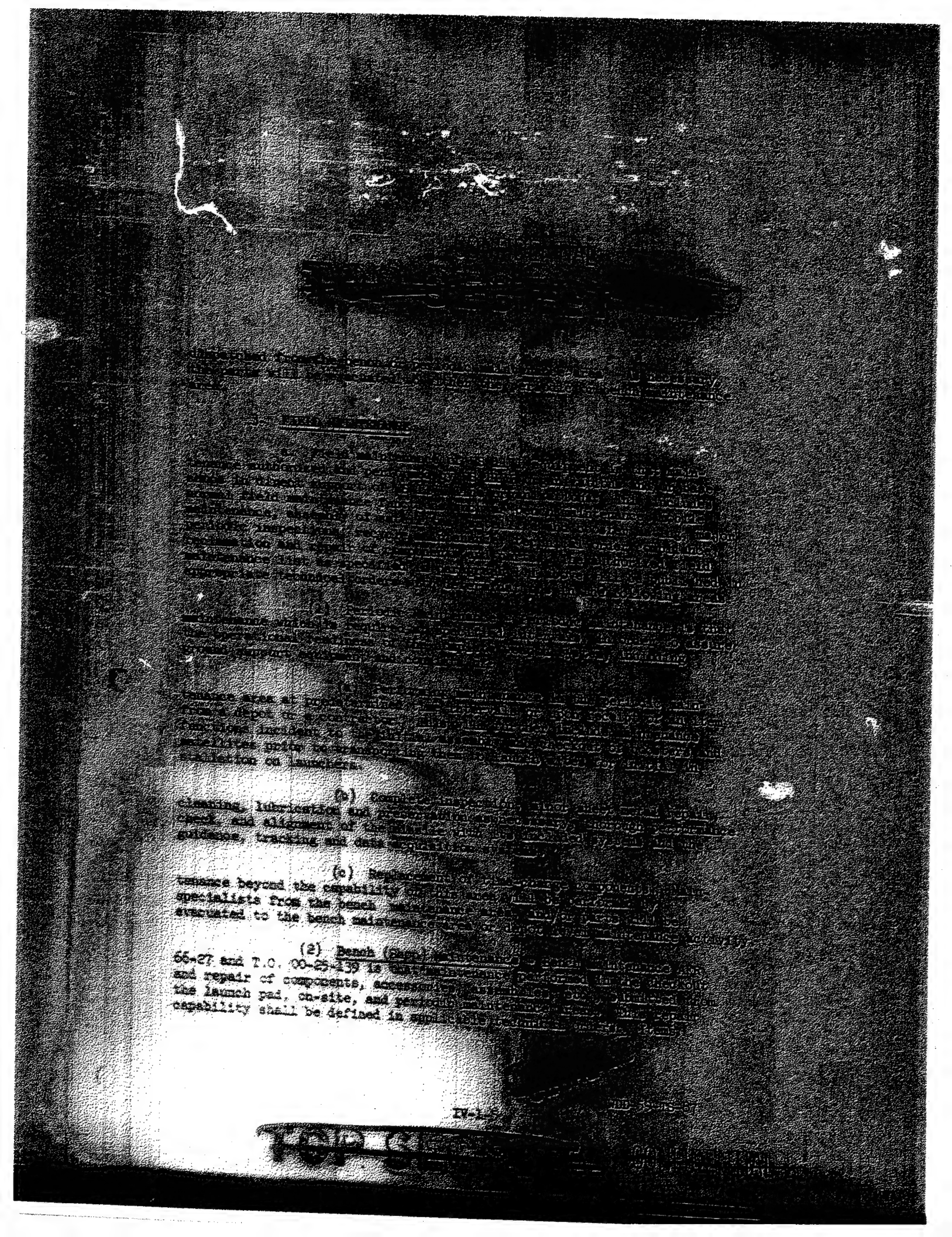
1. GENERAL

a. There will be three levels of maintenance performed on [redacted] WS 461L Advanced Reconnaissance System: [redacted] and depot. The using command will be responsible for [redacted] and field level maintenance on [redacted] ment, Central Intelligence station equipment [redacted] ment. Depot level maintenance [redacted] Command. It will include that maintenance which is beyond the capability of the using organization and will be performed at contractor facilities at AMA's/Depots, or through the use of mobile depot level maintenance teams.

b. Maintenance of communications equipment installed at the readout stations and at the Central Intelligence Station, together with their components, shall be performed as prescribed in this document. Depot maintenance of command communications fixed facilities for operational control (such as telephone and microwave) [redacted] troop capability, where necessary, by separate contract.

[redacted]





[redacted]

[redacted] beyond the capability of the AAC depot or that [redacted] activity and mobility [redacted] to the concept of [redacted] depot [redacted] In Section IV, the [redacted] scope [redacted] control [redacted]

(a) Assemblies, subassemblies, or components, and parts will be repaired and returned to [redacted] detection and replacement of [redacted] controls, switches, gears, springs, tubes, hoses, seals, bearings, [redacted] connectors, etc.) are [redacted]

(b) The repair of assemblies, subassemblies, components and parts should not require the use of [redacted] or special tools for [redacted]

(c) Special tools, [redacted] fixtures, gages, test stands, and checkout equipment should be limited to [redacted] for receipt, verification, assembly checks and minor repairs only.

(d) Major repair, overhaul, and modification of [redacted] systems and major assemblies, such as guidance, control and propulsion packages will normally be accomplished by contractors or the [redacted] Command AMA's/depots.

4. DEPOT LEVEL MAINTENANCE

a. The Air Materiel Command will be responsible for the management control of all depot level maintenance, both contractor and USAF. This includes the provisions for mobile depot level teams for assisting the using command to accomplish depot level tasks [redacted] resources and capabilities. This will include but is not limited to major modifications and repairs, [redacted] assembly of components and boosters, major overhauls, storage and explosive disposal, etc.

b. Depot level maintenance support for [redacted] items will be provided by the appropriate contractor. The contractor's production facilities and equipment will be used to accomplish depot level support.

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[redacted]

TOP SECRET

c. Depot level contractor maintenance for US Army peculiar items should be contracted during such time as organic capability is established. Such contractor maintenance should be accomplished by Army depots. At which time, the maintenance program shall be reevaluated from the standpoint of military effectiveness, economy, and capability of personnel. Constant surveillance shall be maintained by the ASM to insure that contractor maintenance is performed in the best interests of the Army.

d. The "SKY HOOK" principle shall be employed wherever possible to furnish specialist team support to the using organization. The contractor shall possess such mobile maintenance capability as is required to provide maintenance support as far forward as possible. Field support shall be rendered as prescribed by the AMC/ASM.

5. FEATURES AFFECTING MAINTENANCE

a. Due to the size, weight, fragility and sophistication of the between production and actual launch, it is impossible to return satellites to depot level for major repair. Special techniques and procedures developed to repair these items at organizational level will be held to a minimum. Whenever practicable, malfunctioning will be repaired on site through the use of contractor and Air Force mobile teams. Sufficient organizational level tools and test equipment will be provided to permit maximum repair capability at the launch installation.

b. The guidance [illegible] required to insure optimum success is attainable only through the proper integrated functioning of operational GSE and associated test equipment within specific tolerances. An added calibration requirement [illegible] shall take early action to define the weapon system calibration requirements. AMC shall insure adequate calibration capability at organizational and depot level.

6. TECHNICAL DATA: The development of handbooks in sufficient time to meet training and operational dates will be managed by AFCMD. AMC will provide support as required to the manual development program and will deliver available manuals to the [illegible]

7. MODIFICATION

a. Major overhaul and modification of major components (e.g., gear, boosters, batteries, and associated equipment) shall be performed at organizational level wherever possible. When access by personnel and equipment shall be augmented through the use of mobile repair teams from the depot level repair facility. Those modifications which cannot be economically performed in the field, or which require equipment such as special stands, environmental conditions, or calibration of equipment which exceeds the capability of portable standards, shall be performed by contractor production facilities. The contractor shall maintain a continuous capability to modify existing systems to the latest configuration, as directed by the Air Force. Modification instructions or modifications of the satellite system which affect the booster package or associated GSE are properly coordinated with the selected launch vehicle contractor. These items which have received development acceptance (adopted status) as defined in AFR 80-14, shall be modified as prescribed in AFR 57-4.

b. Modifications normally shall not be made to equipment on the same basis as operational equipment so long as training is not conducted on complete configurations.

[redacted]

V. FACILITIES

A. GENERAL

In order to provide [illegible] by the [illegible] and operational data for the SENTRY purpose [illegible] employed. The [illegible] communication will be covered [illegible] with [illegible] close coordination [illegible] Both [illegible] to insure [illegible] commands and support [illegible]

B. SYSTEM REQUIREMENTS

1. Launch

Insert [illegible] at the launch sites. During [illegible] programmed for [illegible] schedules. As the number of R&D and [illegible] late 1961 time period, additional [illegible] launch facilities will be required by [illegible] operational requirements. [illegible] by October 1961. Facilities will [illegible] receive, inspect, and maintain [illegible] R&D and operational programs.

2. Tracking and Acquisition (T/A)

Unhardened facilities [illegible] acquisition stations to be located at Vandenberg [illegible] Boston Bombing Range, New Hampshire, and Grand Turk [illegible] R&D program. These technical facilities will be [illegible] operational and R&D activities. Facilities will also be provided as part of the R&D program to permit [illegible] these facilities for both R&D and operational purposes [illegible] 1965 time period will greatly reduce the [illegible]

3. Control & Processing (C&C and C&P)

Control and Intelligence Data [illegible] provided at Offutt Air Force Base, Nebraska, [illegible] program. These facilities will be used primarily for the operational program commencing October 1961.

[redacted]

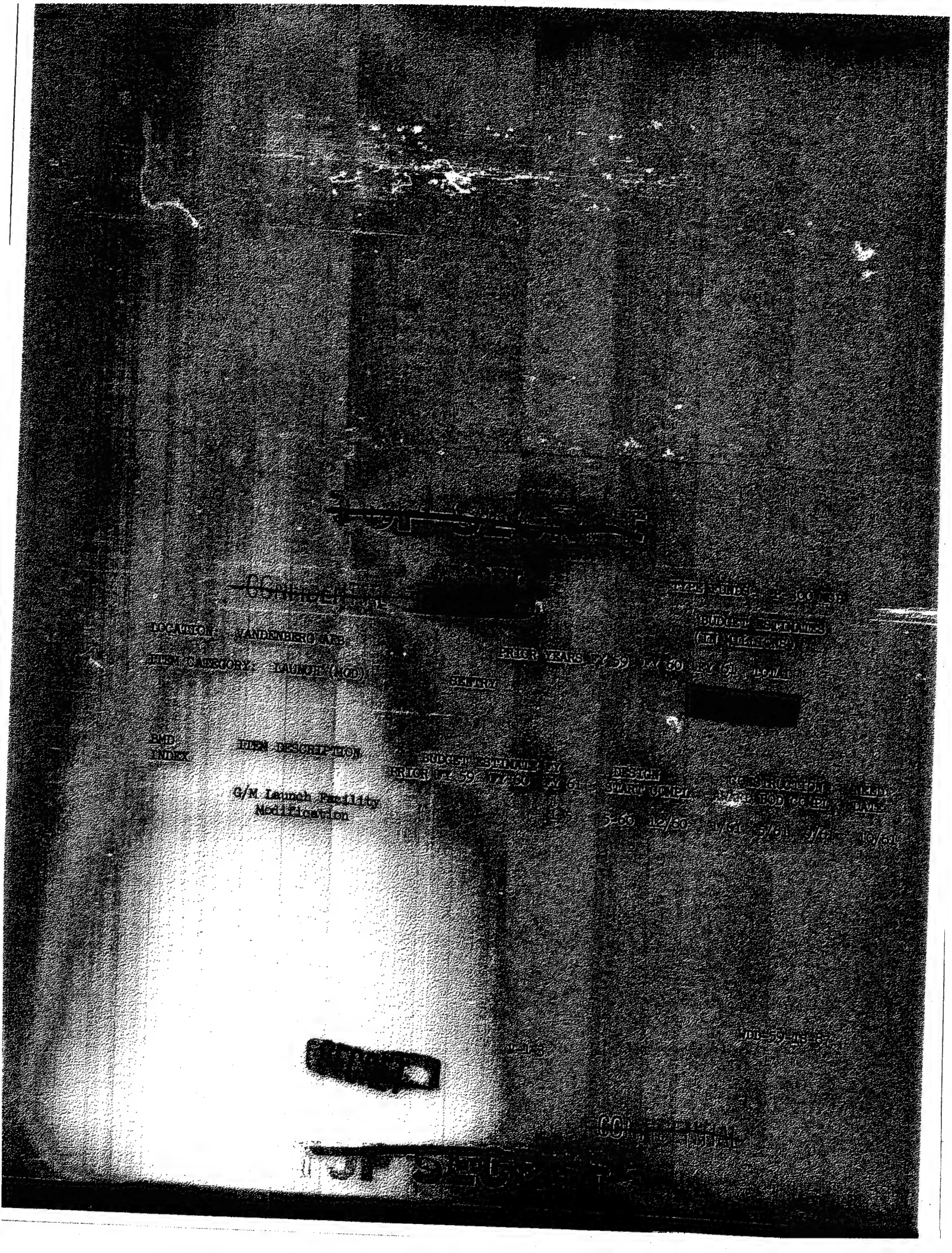
c. SUPPORT FACILITIES

1. Facilities for [illegible] will be provided by the [illegible] supporting the development/operation [illegible] Support facilities will be located on or adjacent to the [illegible]

2. Individual and integrated [illegible] will be conducted outside using R&D/operational equipment to the maximum [illegible] Facility support for the [illegible] will be provided.

3. Communal facilities, including [illegible] and housing for families, are considered an essential part of the [illegible] must be either available or provided [illegible] Technical facilities and communal [illegible] with regard to quality and number [illegible] the motivation and retention of the [illegible] and maintain this system.

4. Planning and programming for required support facilities will be the subject of future action.



LOCATION: VANDENBERG AFB

BMD INDEX | ITEM DESCRIPTION | BUDGET ESTIMATE FY | PRIOR FY 59 | FY 60 | FY 61 | DESIGN START | CONSTRUCTION START | TEST DATE

G/M Launch Facility Modification | | | | | | 3-59 | 12/60 | 1/62 | 5/61 | 9/62 | 10/61

TOP SECRET

LOCATION: VANDENBERG AFB

ITEM CATEGORY: LAUNCHER (MOD)

SECRET

CONFIDENTIAL

DESCRIPTION & UTILIZATION: The modification of launch stands "B" and "C" is required to provide an operational launch facility for the orbit requirements in the SENTRY Program. This modification will provide an orbital orientation launch capability for the SENTRY utilizing MOD II guidance station.

SECRET

CONFIDENTIAL

TOP SECRET

TOP SECRET

~~CONFIDENTIAL~~ [redacted]

TYPE FUNDS: P-300 MCP

LOCATION: VANDENBERG AFB

ITEM CATEGORY: MISSILE SUPPORT

	PRIOR YEARS	BUDGET ESTIMATE (IN MILLIONS) FY 59	FY 60	FY 61	TOTAL
WS 117L			2.1		2.1

BMD INDEX	ITEM DESCRIPTION	BUDGET ESTIMATE FY PRIOR FY 59	FY 60	FY 61	DESIGN START	DESIGN COMPL	CONSTRUCTION AWARD	CONSTRUCTION BOD	CONSTRUCTION COMPL	NEED DATE
	G/M Assembly Bldg Extension		2.1		07/59	01/60	01/60	01/61	06/61	7/61

TOP SECRET

LOCATION: VANDENBERG AFB

ITEM CATEGORY: MISSILE SUPPORT ~~CONFIDENTIAL~~

Description and utilization: This facility will contain 55,000 sq ft of floor area, and will be used as an assembly, check-out, and maintenance facility for the SENTRY vehicle.

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LOCATION: OFFUTT AFB

ITEM CATEGORY: TOCC & IPC (MOD)

SENTRY

TYPE FUNDS: P-300 MCP

BUDGET ESTIMATES (IN MILLIONS)

PRIOR YEARS	FY 59	FY 60	FY 61	TOTAL
		1.85		1.85

BMD INDEX	ITEM DESCRIPTION	BUDGET ESTIMATE FY PRIOR	FY 59	FY 60	FY 61	DESIGN START	DESIGN COMPL	CONSTRUCTION AWARD	CONSTRUCTION BOD	CONSTRUCTION COMPL	NEED DATE
				1.85		10/59	2/60	4/60	3/61	8/61	10/61
	Technical Operations Control Center and Intelligence Processing Center										

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~~SECRET~~

LOCATION: OFFUTT AFB

ITEM CATEGORY: TOCC & IPC

~~CONFIDENTIAL~~

DESCRIPTION AND UTILIZATION: The Technical Operations Control Center and Intelligence Processing Center will consist of a building or buildings having approximately 150,000 sq. ft. of floor space. This area is required to accomplish the following functions: Control mission planning and system command control and operation; orbital computations to correlate data from T/A stations and determine, correct, and predict ephemeris data; receive, evaluate and calibrate new reconnaissance data for rapid determination of vehicle equipment performance, and the generation of suitable correction programs and commands to be relayed to the space vehicle, communications center, initial reconnaissance data processing and miscellaneous command administration. The existing original Martin Aircraft Company Plant at Offutt AFB will be modified to satisfy the TOCC/IPC requirement.

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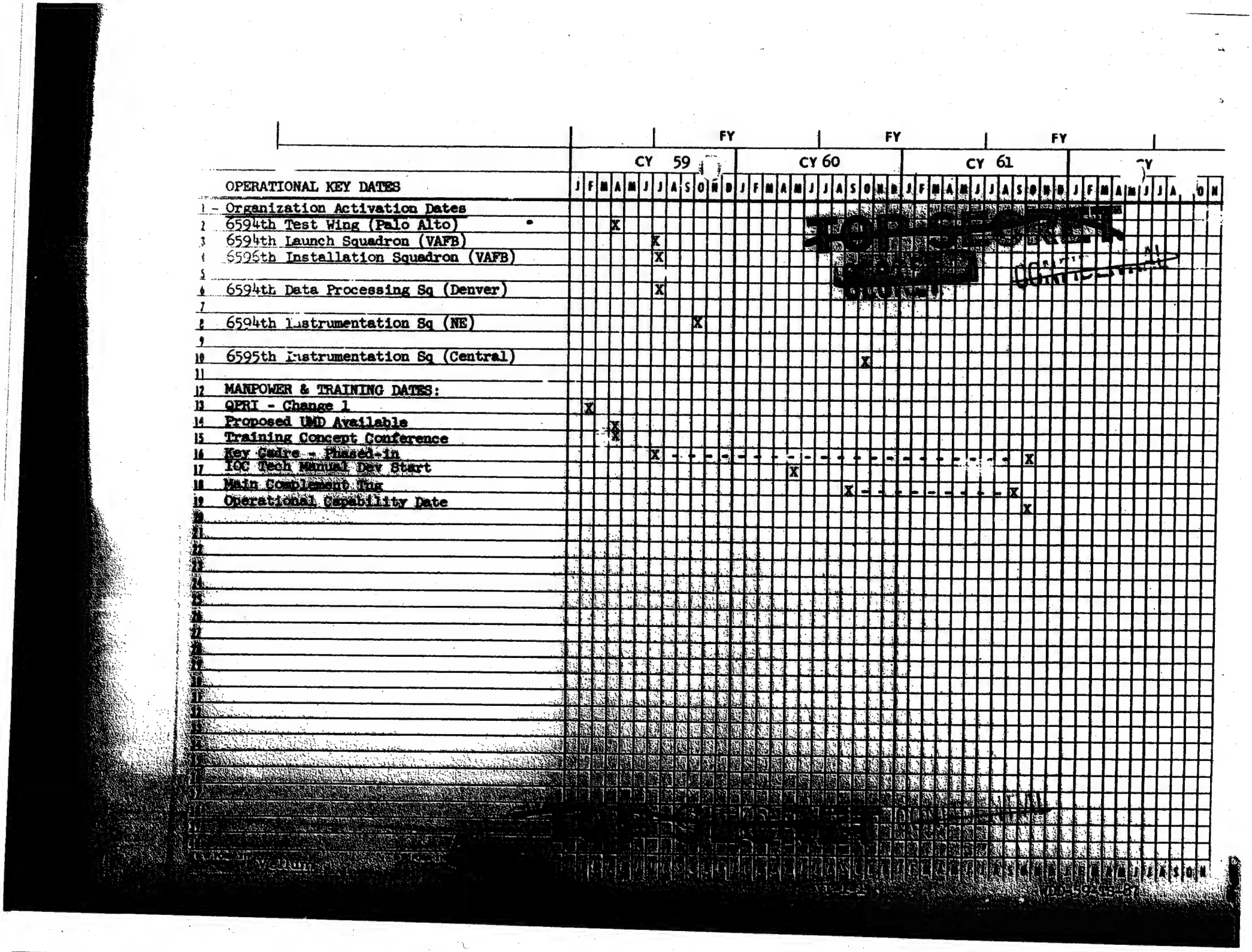
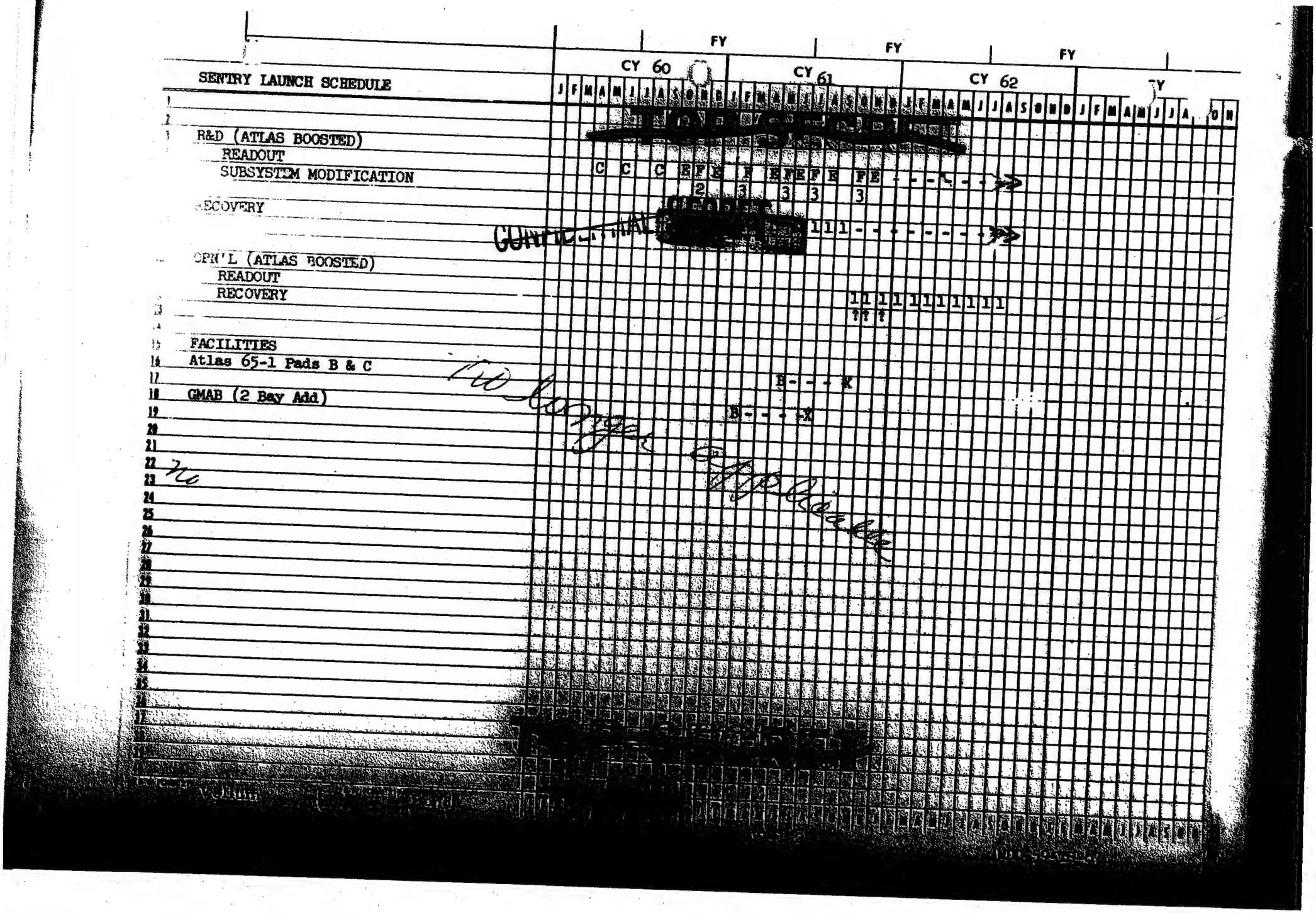
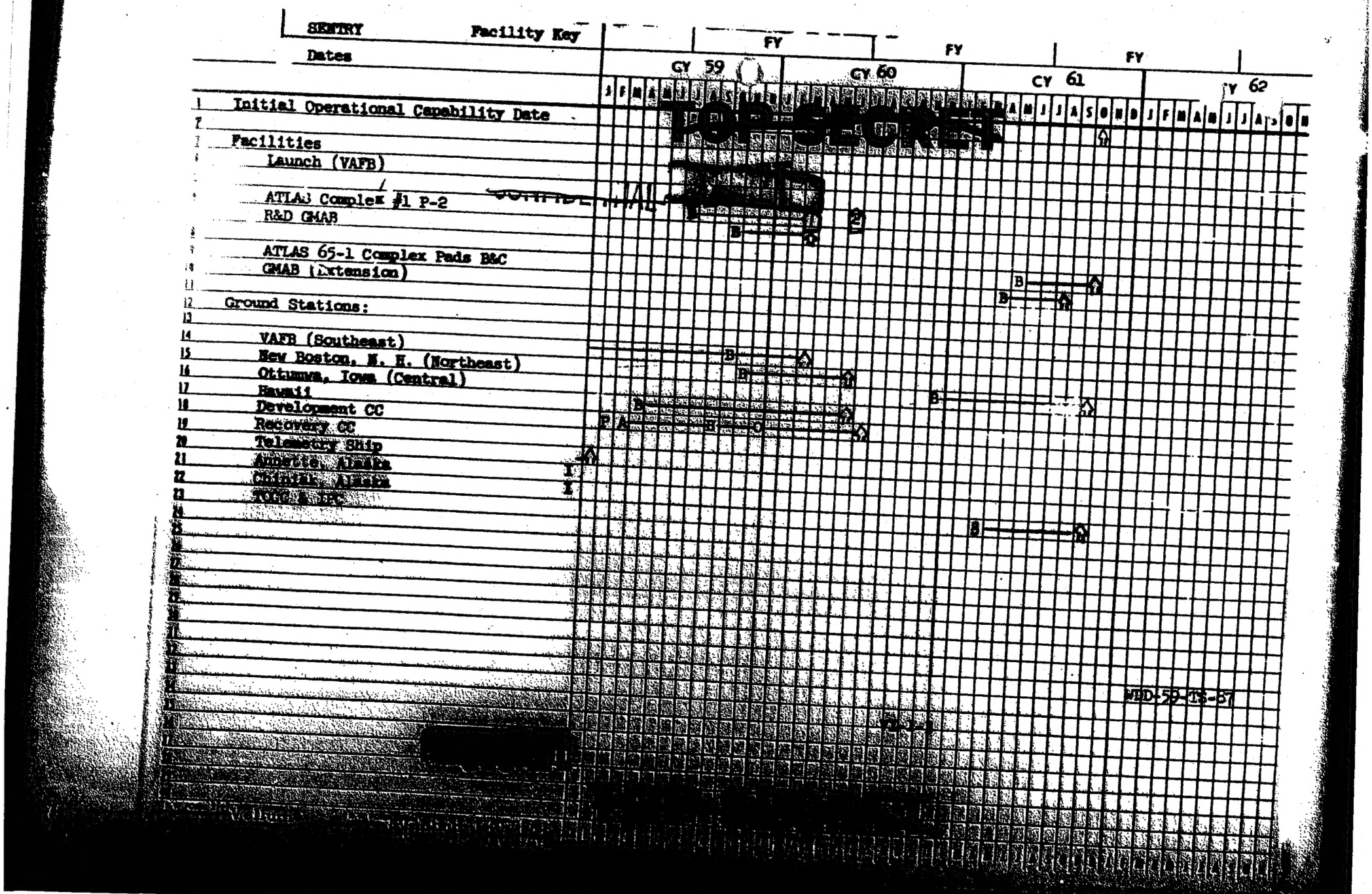
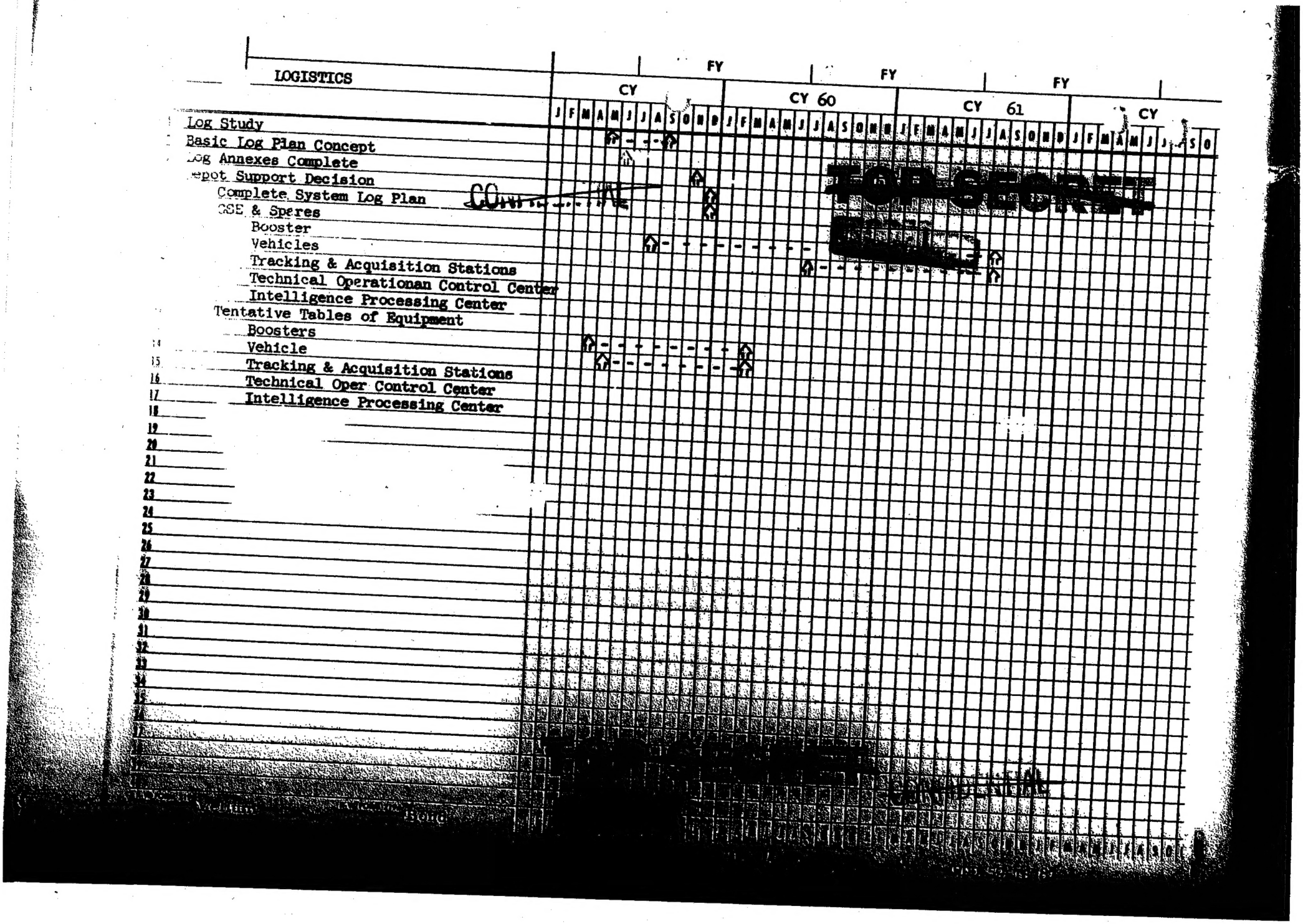

FY
FY
FY
CY 59
CY 60
CY 61
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A O N
OPERATIONAL KEY DATES
1 - Organization Activation Dates
2 6594th Test Wing (Palo Alto)
3 6594th Launch Squadron (VAFB)
4 6596th Installation Squadron (VAFB)
5
6 6594th Data Processing Sq (Denver)
7
8 6594th Instrumentation Sq (NE)
9
10 6595th Instrumentation Sq (Central)
11
12 MANPOWER & TRAINING DATES:
13 QPRI - Change 1
14 Proposed UMD Available
15 Training Concept Conference
16 Key Cadre - Phased-in
17 IOC Tech Manual Dev Start
18 Main Complement Trg
19 Operational Capability Date


SENTRY LAUNCH SCHEDULE
FY
CY 60
CY 61
CY 62
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N
R&D (ATLAS BOOSTED)
READOUT
SUBSYSTEM MODIFICATION
RECOVERY
OPN'L (ATLAS BOOSTED)
READOUT
RECOVERY
FACILITIES
Atlas 65-1 Pads B & C
GMAB (2 Bay Add)


SENTRY
Facility Key
Dates
FY
FY
FY
FY
CY 59
CY 60
CY 61
CY 62
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N
1 Initial Operational Capability Date
Facilities
Launch (VAFB)
ATLAS Complex #1 P-2
R&D GMAB
ATLAS 65-1 Complex Pads B&C
GMAB Extension
Ground Stations:
VAFB (Southeast)
New Boston, N. H. (Northeast)
Ottumwa, Iowa (Central)
Hawaii
Development CC
Recovery CC
Telemetry Ship
Antigua, Alaska
Guam, Alaska
TOTS & IPC
B
WDD-59-TS-87


LOGISTICS
FY
CY
CY 60
CY 61
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O
Log Study
Basic Log Plan Concept
Log Annexes Complete
Depot Support Decision
Complete System Log Plan
GSE & Spares
Booster
Vehicles
Tracking & Acquisition Stations
Technical Operationan Control Center
Intelligence Processing Center
Tentative Tables of Equipment
Boosters
Vehicle
Tracking & Acquisition Stations
Technical Oper Control Center
Intelligence Processing Center

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SUMMARY of FUNDS REQUIRED (In Millions)

	FY 60	FY 61
Lockheed		
Vehicle	10.5	[redacted]
Payload		
GSE		
GSE (Technical Operations Center)	(1.0)	
Training Parts	(7.5)	
	(2.0)	
RADC		
Equipment for Intelligence Processing Center	11.5 (5.4)*	[redacted]
Atlas Booster and GSE	.4	
Facilities		
Rehabilitation of Martin Plant	4.9 (.2)*	[redacted]
Modification ATIC Building	(2.5)	
MAB Addition	(.3)	
	(2.1)	
Modify (3) 65-1 Launch Stands		[redacted]
TOTAL	27.3	

NOTES:

1. This summary does not include funding requirements for support facility items such as living quarters, messing, administration, recreation and welfare, religious and medical facilities. In general, it is planned that SENTRY operational units will be located as tenant units at or near established Department of Defense installations. Immediate steps will be taken by ARDC (AFBMD) to notify the parent commands of bases concerned of specific SENTRY support facility requirements and planned personnel buildup. This action will permit commands concerned to initiate required programming activities.

2. This summary does not include P-400 funding requirements in support of training. ATC will budget for these requirements.

3. Funds indicated by asterisk are in support of the interim processing facility to be located at Orlando AFB during the R&D phase.

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APPROPRIATION	
P-151	
P-131	
P-214	
P-214	
P-300	
P-300	
P-300	
P-300	
P-300	

* Rehabilitation of existing facilities at [illegible]

NOTES: 1. This summary does not include [illegible] living quarters, messing, administrative, [illegible] medical facilities. [illegible] located as tenant under [illegible] Immediate steps will be taken by [illegible] concerned of specific [illegible] buildup. This action will [illegible] activities.

2. This summary does not include [illegible] This requirements will be identified during the [illegible] scheduled for April 1959.